

# San Francisco Bay Conservation and Development Commission

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April 1, 2016

**TO:** All Commissioners and Alternates

**FROM:** Lawrence J. Goldzband, Executive Director (415/352-3653; [larry.goldzband@bcdc.ca.gov](mailto:larry.goldzband@bcdc.ca.gov))

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**SUBJECT: Draft Minutes of March 17, 2016 Commission Meeting**

**1. Call to Order.** The meeting was called to order by Chair Wasserman, at the Ferry Building, Port of San Francisco Board Room, Second Floor, San Francisco, California at 1:08 p.m.

**2. Roll Call.** Present were: Chair Wasserman, Vice Chair Halsted (represented by Alternate Chappell) and Commissioners Addiego, Bates (arrived at 1:20), Chan (represented by Alternate Gilmore), Cortese (represented by Alternate Scharff), DeLaRosa (represented by Alternate Jahns), Hicks (represented by Alternate Galactos), Kim (departed at 2:40), Lucchesi (represented by Alternate Pemberton), McGrath, Nelson, Pine (departed at 3:14), Randolph, Sartipi (represented by Alternate McElhinney), Sears, Sperling (represented by Alternate Vasquez), Techel (departed at 3:14), Wagenknecht (departed at 3:14), Ziegler and Zwissler.

Chair Wasserman announced that a quorum was present

**Not present were Commissioners:** Department of Finance (Finn), Speaker of the Assembly (Gibbs), Contra Costa County (Gioia), Sonoma County (Gorin).

**3. Public Comment Period.** Chair Wasserman called for public comment on subjects that were not on the agenda.

There was one public speaker present to comment.

Ms. Brianne Riley addressed the Commission: I am the new Manager of Policy and Operations at the Bay Planning Coalition. I started on March 1<sup>st</sup>. Our Executive Director John Coleman would normally be here to make this announcement but he is in D.C. holding some water-related meetings. I want to make sure that everybody is aware of our upcoming event. We have a Decision Makers Conference every spring. It is being re-branded this year to be the BPC 2016 Spring Summit. It will be held in the same place we had it last year, at the Scottish Rites Center in Oakland on Friday May 6<sup>th</sup>. It is an all-day event.

The theme for this year is, "Bay Planning for the Next 33 Years, Risks, Readiness and Rewards." We hope you can join us there and we will have more information on our website in the next couple of days.

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**BCDC MINUTES**  
**March 17, 2016**

Chair Wasserman asked: Why 33 years?

Ms. Riley replied: I think that is the age of the Bay Planning Coalition.

Chair Wasserman moved to Approval of the Minutes.

**4. Approval of Minutes of the March 3, 2016 Meeting.** Chair Wasserman asked for a motion and a second to adopt the minutes of March 3, 2016.

**MOTION:** Commissioner Wagenknecht moved approval of the Minutes, seconded by Commissioner Zwissler.

**VOTE:** The motion carried with a vote of 20-0-0 with Commissioners Addiego, Bates, Kim, McGrath, Nelson, Pine, Randolph, Sears, Techel, Wagenknecht, Ziegler, Zwissler, Gilmore, Scharff, Jahns, Pemberton, McElhinney, Vasquez, and Vice Chair Chappell and Chair Wasserman voting, "YES", no "NO", votes and no abstentions.

**5. Report of the Chair.** Chair Wasserman reported on the following: First of all, happy Saint Patrick's Day. We have had headlines that are relevant to us this week, including today, about the melting of the glaciers in New Zealand. You can't walk to them anymore. The access is gone because they have diminished so much. Our problems are continuing to get worse. It was interesting that on Monday there were two items; one is a cartoon that is in our packet. It depicts some teacher who is pointing that the boiling frog theory states that if a frog is placed in boiling water it will jump out. But if the water is slowly heated, it will not perceive the danger and die. The audience who is sitting in water up to their shoulders says, "I don't get the relevance. Isn't this supposed to be a seminar on climate change?" (laughter)

The other article that appeared that day was on a study coming out of the University of Georgia which ties growth of population to likely inundation from sea level rise; there are two points, one, it starts treading into areas that we try to avoid which is that there are some areas that we will not be able to save and some people will have to move. The study, which some have criticized as exaggerated, projects that the migration required by sea level rise will exceed the migration of African Americans from the South to the North. They are talking over 13 million people. Most of that is in the southeastern United States but of the states listed in terms of the impacts, California is third. Amongst the counties most impacted in the United States is San Mateo.

All of this is to emphasize that our task becomes daily more important. One would hope daily easier but I don't think that is true. I think that it is still very hard to get people to understand that the water is getting very hot and very high indeed; much faster than we expect.

a. **New Business.** Does anybody want to request a new business item here? (No Requests were made)

b. **Bay Fill Policies Working Group Update.** Chair Wasserman asked Commissioner Nelson to provide a brief report on the meeting that was held that morning. Commissioner Nelson addressed the Commission: We had a terrific discussion lead by Brian Ross with the E.P.A. about dredged material and reuse and issues related to the Long-Term Management Strategy for Dredging and laid out our agenda for the next couple of meetings during which

staff will come back and start integrating some of what we learned from the past half dozen or so meetings and start looking at how all of those different threads weave together and what we can learn from that as a Commission.

Chair Wasserman continued: Any questions? (No questions were voiced)

c. **Next BCDC Meeting.** Our next meeting will be April 7th at the Metro Center in Oakland where we will have the third of our Commissioner workshops on rising sea level. We have had very good attendance. At the last one there were over 90 people. We've got major decision makers and scientists.

d. **Ex-Parte Communications.** That completes my report. Does any Commissioner wish to make a report of ex-parte communications? (No Commissioners reported communications) Again, you can do this onsite and you need to do it in writing under any circumstances. With that we will go to our Executive Director's Report.

**6. Report of the Executive Director.** Executive Director Goldzband reported the following:

I should note in addition to what Chair Wasserman said about the Georgia report I was actually interviewed on KCBS on Tuesday morning about it and in preparation I did a little bit of research in the California Department of Finance website to note that the state of California between now and 2060, according to the forecast that the Department of Finance uses for the state, will grow approximately 33 percent in population over the next 45 years. The Bay Area will grow by about a quarter, a little over 10 million people. It demonstrated that there will be more people who will be affected.

I want to wish each of you a happy St. Patrick's Day. My experience in working and playing with individuals of Irish descent and so many others with strong ethnic identities leads me to believe that there are many more commonalities among those of us with diverse ethnic and religious backgrounds than there are differences. For example, I had a great aunt who always seemed to answer the phone by saying, "Hello – what's wrong?" (Laughter) That outlook reminds me of what William Butler Yeats said about an individual he knew in Dublin. "Being Irish," Yeats said, "he had an abiding sense of tragedy, which sustained him through temporary periods of joy." I can't promise joy among today's proceedings but I can also promise that there will be no tragedy.

Tomorrow we shall interview four candidates for our vacant CFO position. It is important to note that each has applied by virtue of our listing the position on LinkedIn and not by the regular state system. Each is applying from a position in the private sector. We still have not been able to hire a supplemental accountant, but we're trying. We also soon shall ask the Department of Finance to provide our staff with increased and specialized training in using the new budget and accounting system to track grants and contracts expenditures and be able to bill for them correctly.

You'll remember all the movement that we've had within the staff during the past few months. I would ask that you approve the hiring of Todd Hallenbeck, who earned his undergraduate degree in Marine Biology from UC Santa Cruz (yes, another Banana Slug), and his Master of Science in Coastal Science and Policy from Cal State Monterey Bay, so he is also an Otter (that might be the staff's most interesting mascot combination). Most recently, he served as the Ocean Data Portal Program Coordinator for the West Coast Governors Alliance and before that he was a Sea Grant Fellow with the State of Oregon Governor's Natural Resource Office. Todd also has served as a hydrography and fisheries technician and he has great experience in the fields of geographical information systems and coastal spatial planning. He will work in the Permit Unit.

You should take a look at two really interesting articles in your packets today. The first is a nice summary of the work at the University of California, Berkeley that is being pursued by Kristina Hill. Professor Hill is on the leading edge of the Climate Readiness Institute and is working to provide us by year's end with a very good working knowledge of which climate adaptation/rising sea level projects have encountered the most success and perhaps are the most scalable. I also encourage you to read the article in Politico about the work of the Mayor of Miami Beach as he works hard to keep that city from drowning any more quickly than it otherwise would.

Finally, for the last time and I want to thank Commissioner McGrath, please submit your FPPC Form 700s by April 1st. I have in my hand a list of Commissioners and alternates. I will note that there are now approximately eight of you who have turned in Form 700 which means that there are approximately 40 of you who have not. I shall not be at the workshop on April 7<sup>th</sup> because it is Spring Break. However, I have no qualms in early May when we meet after that to ensure that we have a public reading of those who have not turned their Form 700 unless the Chair asks me not to do so. I encourage you all to avoid public shaming and to increase your velocity of turning in your Form 700.

That completes my report. I am happy to answer any questions.

Chair Wasserman continued: Questions? (No questions were voiced) One item that I forgot in my report that I wanted to commend to your attention is a document that some of us got at the last workshop which is from the Live Edge Adaptation Project envisioning a living infrastructure for future shorelines by Nate Kauffman. It is a lushly produced pamphlet but it is one of the best, short, comprehensive views of what can and should happen in terms of adapting to sea level rise. It is online at [www.n8kauffman.com](http://www.n8kauffman.com). It does say that we have a blind spot about Bay fill given the need for beneficial reuse of fill which is no longer true. With that we will go on to Administrative Matters.

**7. Consideration of Administrative Matters.** Chair Wasserman announced: There are no administrative listings to consider. That brings us to a closed session regarding the U.S. Army Corps of Engineers' refusal to accept certain conditions of the consistency determination for maintenance dredging. It is an important issue and we want to make sure that as many Commissioners as possible are here for it. If we will clear the room except for Commissioners and those who are necessary to the presentation, then the closed session will begin. (The room was cleared and the closed session began.)

**8. Closed Session on the Refusal of the U.S. Army Corps of Engineers' (USACE) to Accept Certain Conditions to the Commission's Concurrence with the BCDC Consistency**

**Determination No. C2015.002.00 for the USACE's Operation and Maintenance Dredging**

**Program for San Francisco Bay** Acting Chair Chappell continued the meeting: We have completed our closed session regarding the U.S. Army Corps of Engineers' refusal to accept certain conditions of the Commission's concurrence with the Corps' consistency determination for its maintenance dredging activities and did not take a reportable action.

**9. Briefing on the Update of the Baylands Ecosystem Habitat Goals Project** Acting Chair Chappell announced: Item 9 is a briefing by Jeremy Lowe of the San Francisco Estuary Institute on the recent update of the Bay Ecosystem Habitat Goals.

Dr. Jeremy Lowe addressed the Commission: I am a senior scientist at the San Francisco Estuary Institute. I was one of the co-authors on the recent Baylands Habitat Goals update. I hope this provides a vision of what we can do with climate change in the Bay over the next few decades. The purpose of the Baylands Habitat Goals update was to synthesize the science and understanding that we have generated over the 15 years since the first version was produced and also to start understanding how we can accommodate and adapt to the ongoing challenges of climate change that we will be seeing over the next century. The goals remain the same in terms of creating a healthy ecosystem and creating a resilient shoreline for people and wildlife, but how we do it is going to change.

I will be talking about the recommendations that came out of that work and how it might influence our thinking about the Bay itself. This was about a two-year process and there were many more pieces completed outside the part I worked on. We had about 200 scientists, stakeholders, land managers and regulators involved in each of the chapters. We had a lot of external work as well, including a national science review panel as well. We had a steering committee of 21 agencies working in the Bay. This was coordinated by Letitia Grenier, the science coordinator, who also worked with professional facilitators and an implementation team. There was a lot of process and that was one of the big products of this work; it is not just the pieces of papers that came out but also the interactions between all the stakeholders, managers and scientists.

The first thing we got out of this is that, we need to think about what we are restoring. We have restored a lot of tidal marsh in the last 15 years. The new Baylands Goals Update focuses a lot on the other parts of the complete wetlands system, the subtidal, the mud flats and the value that those have in relation to managing and maintaining the salt marsh, as well as in their own right, helping to provide support for the food web. Those marshes have been much more highly valued here, and we are thinking about how we can incorporate those into restoration projects. We are also very much interested in the upper part of the shoreline. Usually we focus on the bit that is going to get wet with each tide but we also have a very important connection with the upland through what is called the transition zone. The transition between the tidal areas to those upland areas is currently often a steep slope on a levee.

Increasingly, with sea level rise, the transition zone is going to be an important place for marshes to migrate. It is also an important habitat component providing refugia for clapper rail and salt marsh harvest mouse during high tides today. We have undervalued the transition zone in the past so we are looking at ways in which we can incorporate those changes into the shoreline.

We are also reconsidering the restoration of the processes. What we have done is separate the marshes from their supplies of sediment and their supplies of fresh water. We have put up berms and levees and channels and we have put lots of water into pipes. By doing this we are reducing the ability of these marshes to function and to adapt. Looking ahead and thinking about how these marshes are going to work in the future we need to start reconnecting those pieces. A large part of the discussion in the Baylands Habitat Goals Update is, how do we reconnect our uplands to the marshes? How do we get the sediment supplies into the marshes? How do we recreate fresh water salinity gradients?

These are all questions that we have not really addressed in the last 15 years and we are going to start having to do that more and more. And it is not just a reconnecting of natural processes; we have changed the landscape a lot. We are actually going to have to move things around. A prime example of this is the use of sediment. We are going to have to mechanically place it either close to or on the marshes if we are going to have those areas in the future that we manage for.

In thinking about that, we have to consider new ways we can manage the Bay, new processes and how they could be incorporated into our management of the marshes. We also need to think about doing things more quickly. We have a ticking clock now, which is the result of sea level rise and climate change. We need to think about the agenda being driven by the changes in the natural environment. It is a question of time and how quickly we can restore habitats. There is an ambitious goal set forth in the Baylands Habitat Goals Update goals for creating and restoring as much of the marshes as possible. The higher in elevation our marshes are, the more mature they are, and the more resilient they are to sea level rise. We need to think about how and when and where we are going to prioritize the next sets of restorations.

The third thing we can do is, we can think about how Baylands might want to move. With sea level rise we are going to find that marshes will need to migrate upland and inland. That is what happened 6,000 years ago, when we had our last high rate of sea level rise. We tended to have a lot of movement of marshes. Now we have built levees at the back of the marshes and we have stopped that movement of marshes landward. We should start to think about how we can allow them to move in the future. We need to think about placing materials in front of levees creating those slopes artificially emulating the transition zone. Ultimately we might need to think about realigning those levees; where can we give more space to the marshes? Where it is appropriate and makes sense.

All of these are open-ended questions that the Baylands Habitat Goals Update goals answers. It provides a vision and it provides an idea about where we want restoration work to get to. But it does not answer how we are going to do that. I think that is going to be the debate over the next decade. There are two parts of that debate that we need to think about.

One is the time that it takes to do the work, and that is going to be set by sea level rise. It is going to be set by the rate at which things happen. And this is an uncertainty that we have. We need to think about a Plan A, a Plan B; gradually adapting to the increasing rates of sea level rise.

The other thing that we should do is, we should think about how we divide up the Bay and manage it in more natural systems; develop science-based regions of the Bay which work together in terms of sediment, water and marshes, and think about how to manage those. This would provide a vision for those regions and then think about how those could be paired with appropriate adaptation strategies. One size does not fit all around the Bay. We need to have appropriate adaptation measures for different areas of the Bay. We need to undertake activities at appropriate times and locations and bring those appropriate measures together with all the other assets. We need to marry the ecological management of the Bay with managing the economic and the social equity aspects of the Bay. These are the challenges for us in the next few decades. Thank you.

Acting Chair Chappell continued: And now staff will make some brief comments on the Commission's activities regarding sediment management which is one of the major recommendations of the Goals Project. Chief Deputy Director Steve Goldbeck will start.

Mr. Goldbeck presented the following: I wanted to mention to you that Dr. Lowe just received an award from the Bay Institute for his efforts and thoughtful work on restoration projects around the Bay. On behalf of the Commission I want to thank him for that. (Applause) We wanted to take a brief moment to remind the Commission of all the work that you have done and you are doing on this topic. Back in the '80s, Bay sediments were a problem. But then people thought there was far too much sediment and there was concern that the main in-Bay disposal site near Alcatraz Island was threatening to become a new island.

In-Bay disposal of dredged material became very, very controversial. At that time the Commission actually started advocating beneficial reuse as a key solution for dredged material management. As a result of and to address the dredging issues the Long-Term Management Strategy for the Placement of Dredged Sediment in the Bay Region, -LTMS- was formed in 1990 by the Corps, the US EPA, the Water Board and BCDC. Maximizing beneficial reuse of dredged sediment was one of the four overarching goals of the LTMS Management Plan. The LTMS Management Plan was issued in 2001. While the intent is to maximize beneficial reuse of dredged material, there were few reuse sites available around the Bay at the time and also the potential for environmental impacts if we moved too fast, therefore we included the use of the EPA's designated deep-ocean disposal site in the overall program. The Plan also included a 12 year transition period to make the necessary planning and budgeting adjustments.

I also wanted to note that we have done some major projects in the Bay already to restore habitat. The Sonoma Baylands Project, over 300 acres, the Hamilton Wetlands Project, approximately 900 acres of new habitat and implemented by the Coastal Conservancy and the Corps with the strong support and the direct involvement of the Commission. These projects reused millions of cubic yards of dredged material to restore these wetlands. Through the leadership and deep involvement of the Port of Oakland staff, material from the Port's 50-foot

deepening project was used to construct both of those sites as well as the Port's Middle Harbor Enhancement Project and portions of the Montezuma Wetlands Restoration Project, a private enterprise that is still accepting dredged sediment.

Consistent with the recommendations you have just heard, the Hamilton Wetlands Project was designed to include transitional habitats and also to have resiliency to sea level rise. Thus, the Commission and other partners around the region have been working to use sediments to restore old-Bay habitats for over 25 years.

Brenda will now talk to us about our current efforts. Ms. Goeden presented the following: I want to talk briefly about the sediment management efforts that your sediment management team has been working on for the last several years. First of all I am going to talk about regional sediment management and what it is. I am going to give you a brief update on the LTMS Program's, 12-year review and the current status of the LTMS Program. And then I am going to talk a little bit more about our ongoing regional sediment management efforts. I want to note that as part of your strategic planning work that you did a few years ago, one of the goals was to increase partnerships around the question of sediment management. As you will see through the work that we have been undertaking, SFEI is one of our partners as are many others within the region.

The concept of regional sediment management is the idea that we should look at managing sediment and sediment processes as a system. When you are making project decisions, you need to think about the context of the overall system and how it affects different areas as a result. The idea is that if you are integrating your project thinking with your system thinking, you may get some economies of scale and may do better for the environment.

There is a pretty large movement across the United States in different regions looking at sediment management as an issue and a way of thinking that has changed over the last several years. In California as part of the Resources Agency's initiatives, the California Sediment Management Working Group, works on the development of a Sediment Master Plan. The Master Plan is made up of a number of regional sediment management programs. These regional plans have been or are being developed along the coast of California, depending on the work at the local level. We are the only group, that has been awarded funds to work inside of an estuary in the State. This was a bit of a challenge at first because CSMW was not quite sure the bay was part of the coast. Once convinced, we have continued on with the work on sediment management for the Bay.

First I am going to talk a little bit about dredging because it is our number one big decision making question on sediment movement. LTMS has been going on since the Management Plan was adopted in 2000. In that process the Management Plan said, at year 12 when you get done with your transition period, you need to take a look back and see how you are doing, and whether or not there are adjustments to be made. This slide shows the results of the twelve year review. On the left side, this slide shows the number of cubic yards of sediment in millions, from one million up to seven million. Across the bottom is the timeframe of 2000 to 2013. The transition period was 12 years. The gray step-down is the reduction of in-Bay disposal that we were targeting as part of the LTMS Program. The blue line is the amount of dredging that took place every year during those 12 years. The orange dots connected by

the white dashed line shows how much in-Bay disposal actually occurred. You can see that during the LTMS transition period we were able to meet our in-Bay disposal goals even though we had a fair amount of dredging. It is important to note that the very high amount of dredging that took place around 2005 and carrying on for a little while was the Port of Oakland Deepening Project.

I will focus on a few key findings of the review. The amount of beneficial reuse that took place during this transition period was 20 million cubic yards. We consider this a major accomplishment. The volume reused was a combination of taking material to Montezuma Wetlands Restoration Project, Middle Harbor Enhancement Area and the Hamilton Wetlands Restoration Project. In-Bay disposal was at 20 million cubic yards and ocean disposal was sitting at eight million cubic yards. One of the narrative key findings is that we need to continue doing beneficial reuse because it is more important now to treat that sediment as a resource and support habitats and shorelines along the Bay due to sea level rise and climate change issues. We also determined that ocean disposal is not the best option given the need for sediment. We recognize that ocean disposal is necessary because sometime it is not feasible to take material to beneficial reuse or in-Bay either because of logistics or contaminant issues. We cannot close down the ocean disposal site but we believe that it is important to reduce ocean disposal when we have an option to use the sediment as a resource. And lastly, the USACE's federal standard remains an issue and a hindrance to beneficial reuse.

It has been a couple of years since our transition period and our review. In 2014 we had 36% in-Bay disposal [corrected 57%], 6% in the ocean and 36% [corrected 37%] beneficial reuse, largely due to the Port of Oakland federal navigation dredging project that was able to go mostly to Montezuma. In-Bay disposal in 2015 was 40%, ocean at 28% and beneficial reuse at 31%.

It is important to note that as part of the 12-Year Review, we had a number of listening sessions with the dredging community and one of the things that they said was, "you really need to help us more." "You need to incentivize beneficial reuse more." We took that to heart and we looked around and noted that we were working with NOAA on their programmatic biological opinion: and decided to see if we could work with NOAA to provide more incentive to beneficially reuse sediment. What we were able to do over a three-year negotiating period was reach agreement that restoring habitat does in fact help salmon even though salmon might not be migrating through a wetland restoration project; but agreed that wetlands provide nutrients and they also provide quiet places for salmon to go when they are small. With that understanding NOAA was willing to open the environmental work windows for salmon if we mitigated by placing beneficial reuse at wetland restoration projects that would increase and benefit fish habitat. The amended programmatic biological opinion was first implemented in 2015 and we were able to send approximately 700,000 cubic yards to beneficial reuse primarily due to that incentive provided by NOAA. It is also important to note that we are still working with Cal Fish and Wildlife and U.S. Fish and Wildlife on those efforts.

When we look around and think about how sediment is managed in San Francisco Bay there are four main drivers. One is dredging. The second is sand mining amounting to 1.4 million cubic yards per year. The third is flood protection, which primarily occurs in Bay tributaries. The fourth is habitat restoration and this is primarily because as we open up wetland restoration sites, it takes a lot of sediment to bring subsided sites up to marsh plain elevation. In other cases we are directly placing sediment into those sites.

In the last several years we have spent a lot of time examining the science around sediment in San Francisco Bay. With the Sediment Science Priority Workshop recently taking place, we realize that we still have many more questions that are yet to be answered. We will be coming back in June to talk to you about that again. We have also developed a sand budget. We have looked at beaches along San Francisco Bay, and their condition primarily in the Central Bay. We have also done some interviews with some local communities about what they know about their shorelines. Not too many people know too many things about their local shoreline and its condition. They only know if there is a problem. It is interesting to note that as a region we do not have a really good handle or data set on our shorelines around the Bay.

We did just finish a draft of our Central Bay Regional Sediment Plan. It is off to our granting agency the California Department of Parks, Division of Boating and Waterways. We are waiting for comments before we distribute it more widely. We have been working on flood protection issues through a grant from the USEPA, the Water Quality Improvement Grant Program. We were awarded a grant through the San Francisco Estuary Project working with SFEI and the San Francisco Bay Joint Venture. The goal of this project, Flood Control 2.0, is to look and examine the tributaries and the sediment flow and removal of sediment; to reconnect sediment from these channels to the Bay system or into habitat from the flood control channels. The sediment from the Delta has reduced over time. The tributaries have become much more important, and therefore flood control channels are our focus. San Francisco Estuary Institute has done much of the actual technical research and analysis, examining the channels and identified four different types of channels within the Bay system. They have also examined the record of sediment that has been removed and are in the process of developing innovative designs about how you might change the flood control channel to align it more with habitat to allow sediment to move through or to the Bay front. The Novato Creek Vision is an outcome of this.

And lastly on habitat restoration from the sediment management perspective, we continue to work with the restoration community. We spend a fair amount of time working with the South Bay Salt Ponds folks; identifying areas where we know sediment is needed. We are working in planning efforts to identify how we can get sediment directly placed there. We continue to have discussions with the habitat community.

If you took the acreage of the restoration projects that are in process and how much sediment is needed to get it up to elevation for marsh plain, it was about 240 million cubic yards of sediment. That was not taking into consideration consolidation, sea level rise; it was just pure acreage.

I also want to mention SediMatch. We are thinking about creating a dating service for dredgers, flood protection people and habitat restoration people; how do they all get together? Where do they meet for drinks? (Laughter) This is actually part of the funding from of Flood Control 2.0, but I think about it more as a habitat restoration effort. The idea is that we can create an online dating system to match sediment needs with sediment sources. SFEI and the San Francisco Bay Joint Venture are heading this effort and are developing a website together where you can put in what you have, and what you need and where you are and your contact information and hopefully there will be a love connection. (Laughter) This is a very quick brief overview of what we are doing on sediment management. I will entertain questions if you have them.

Mr. Goldbeck spoke: I would like to briefly close with other things that we are working on with sediment. One of the key issues that limits beneficial reuses is the Corps' federal standard. BCDC staff is working to address this narrow approach through federal legislation working with many partners. These partners include the Coastal Conservancy, the Bay Planning Coalition, Save San Francisco Bay Association and the Bay Institute. The goal of the legislation is to provide congressional direction to the Corps to use dredged sediments from its maintenance dredging program to restore and protect wetlands and shorelines and also to address coastal flooding and rising sea level.

We are expecting to have legislative language ready in time for the next preparation by the US Congress of the Water Resources Development Act, which is the federal law that provides authorities and policy direction to the Corps. Lastly, I would say we and our partners have also been talking with the Bay Congressional Delegation and they are very supportive of this concept. We are working on all fronts. With that we are open for questions.

Chair Wasserman asked: Questions for any of the presenters?

Commissioner Zwissler spoke: I was blown away by the 240 million cubic yards required to do what we are trying to do. Comparing that to over the last 12 years about 48 million cubic yards in total were available. Only 20 million were used. How do we connect those two dots? We hear about the LEAD Plan where we create much more natural buffers against sea level rise; how practical is it really, if we are looking at hundreds of millions of cubic yards and only tens of millions available?

Mr. Goldbeck replied: Well the material we have available is dredged material but it also includes other material as well. There is also material in flood control channels that comes down and clogs the channels. A lot of that material is now dredged and put into landfills or put upland that can be used. There is a lot of material, as Commissioner McGrath mentioned earlier, sitting behind dams that can be opened up and brought back into the system. There is also upland material.

For example, when Apple and other folks are building their big facilities and they have to excavate; that material can actually be used and is being used in restoration. The South Bay Salt Pond Project has been using some of that material from the Dirt Market. There are other sources of sediment but it is a great challenge because the need is very great.

Commissioner Pine had questions: There is a big emphasis on these tidal Baylands migrating as sea level rise happens, can you give us a sense of when you look at the parts of the Bay that are restorable or where we have existing tidal wetlands what percent of those areas have any room whatsoever to migrate? I know you gave an example in the North Bay. When I think of the South Bay it is not obvious to me that there is any way to allow those wetlands to migrate. Dr. Lowe replied: It is not obvious to me either where those places are in the South Bay. (Laughter) The advantage is we do have 80 percent of the South Bay in public ownership with the salt ponds. There is an opportunity as part of the restoration projects to incorporate features which make them more resilient to sea level rise. And one of those features, which we are starting to consider is placing a shallower slope transition against the flood risk management levee. In front of that rather than having a 1:3 or a 1:4 steep slope we could put a longer slope in front of that. That has a lot of advantages to make a better restoration because it puts together some of that transition zone which many species use, and are badly needed around the Bay. In the longer term it provides an area for the migration of the marshes upward. In some places we could go back to those natural features, maybe in the North Bay. In other parts of the Bay we are going to have to think about constructing some of those areas and incorporating those areas into the restorations. There are different strategies in different parts of the Bay. To follow up on the question of what do we do with 240 million cubic yards; as part of that process of placing material and incorporating it into the restorations, we do not need to build it all tomorrow. This could be a phased thing over the next century responding to the rates of sea level rise. I think there are some opportunities there to think cleverly about the timing as well as the location of placing material.

Commissioner Pine commented on the federal standard: Is this a national concern? Are there other areas around the country that are also on to this? I hope so. Mr. Goldbeck responded: Yes, there definitely is. Larry and I were in Washington, D.C. for the Coastal Managers Meeting and we talked with the other coastal programs. In fact, we had a workshop on this issue. People were clamoring to be on the panel to talk about their problems with the Corps and everybody kept nodding their heads saying, yes, this is a big problem.

When we first started talking about this we were wondering, should we do something in federal legislation that was local and then the thought was, really, we should start this as a national issue because it is a national issue all around the country going from Washington all the way around from the Gulf States up around and even in the Great Lakes.

Executive Director Goldzband added: When we started working with our partners and we had a couple of meetings which included a couple of lobbyists whom our partners use in D.C., their recommendation was, go national and if you need to move toward demonstration projects in various parts of the country go ahead and do that. The response that we have been getting from all the members of the House and Senate that our folks have been talking with as well as committee staff is, that is exactly the right way to go.

One of the really interesting conversations I had back there was with a former staffer from Senator Boxer's office who is the ranking Democrat in the Environment and Public Works in the Senate. He just left Senator Boxer's office a couple of months ago to go and work for the

State of California in the D.C. office. He was very, very excited about the fact that we were trying to do this nationally and then stepping back if we needed to step back. I think it is the right way to go.

Commissioner Nelson commented: We have been talking here about how to take advantage of sediment that we have previously thought of as waste and treating it as a resource. We have another material that we previously thought of as waste and that is wastewater. This dovetails in terms of accreting, elevation and marshes and providing habitat value and so forth. Could you talk about the freshwater and transitional habitat and the role that treated wastewater might play as a part of a strategy? Dr. Lowe replied: The Oro Loma Demonstration Project in Hayward is a prime example of trying to figure out how we could manage our shoreline into the future. There we are examining what a future shoreline might look like trying to reconnect the topography, building a longer slope behind a marsh and thinking about how that could work. When we do that in the Bay; we have done that several times in the South Bay, what we tend to do is we get a bit of a weedy mess. It is not great habitat. This is because we have not reconnected the freshwater supplies.

We used to have a lot of freshwater coming into the back of our marshes. We have brackish marshes around the South Bay. We did not have these big sloughs that permeated through and then eventually seeped out into the Bay. We are thinking, would that be a good idea? Why don't we put some water in the back of these marshes connecting those back to these slopes and allow them to go through. But, where do you get the water from? It is in a pipe 10 feet under the marsh and that pipe is owned by the East Bay Discharge District Authority and they said, well, actually, I wonder what it would look like if we disconnected this pipe which was built for the Clean Water Act in the '80s. It was a very centralized system; what would happen if we decentralize it? It would be a bit cheaper than retrofitting it and maybe we could make better use of that treated wastewater effluent. With this project we are treating the waste water better. Are there opportunities to do that? That is the experiment that we are trying out is to see if we can integrate, not just placement of sediment to make our shorelines more resilient, but also to use and recreate some of these other processes particularly the freshwater ones. There are two benefits there. One benefit is that it could provide a better native habitat in these areas. It also could provide some benefit in terms of polishing the treated wastewater effluent and looking at what the possibilities of incorporating that into our process of keeping the Bay clean.

Part of that project is including the University of Berkeley professors and also the Oro Loma Sanitary District, not just geomorphologists and engineers, and so on who would normally be involved in habitat restoration. Together we are looking at how can better manage the Bay for a number of the more immediate issues. Thus we are hoping that we can create a project which is funded in part by the sanitary districts and their need for managing and maintaining the quality of the water. That is an opportunity that we can have and take advantage. Of course everything that I have talked about is illegal, infeasible and unfundable at the moment. (Laughter) That is why there is an experiment behind the levee outside of BCDC's jurisdiction. (Laughter) It is also a good conversation piece. We are going to learn a lot over the next few years about how to deal with these multiple-benefit, multi-objective projects and issues that we face here in the Bay. There are going to be different strategies for different parts of the Bay

because the Bay is different ecologically. There are different people living in those areas. There are different opportunities for sediment and water. We have provided a bigger overall vision about and that is the recommendations that I gave. We have gone through each segment of the area and we have talked about what it used to look like historically, how it is being changed, what it looks like now and then what are the opportunities in those areas that we could take advantage of?

That is the types of local conversations we should be having with stakeholders, the public, infrastructure owners; every place has different opportunities and we have to be clever about how to make the best use of that. We tried to find local information as well as a regional view. That is what those colors are about in our pamphlet.

Chair Wasserman continued: Clearly all of this fits together ultimately as one piece. I think the SediMatch is a wonderful idea. We may move to something like that for adaptation to rising sea levels projects. It should be an inspiration. We thank you very much and there are no public speakers on this and there is no action required.

We are going to do a little switch in order. We are going to go to Item 12.

**12. Briefing on Sand Mining Permit Requirements and Progress** Chair Wasserman announced: Item 12 is a briefing on the status of the recent permits for sand mining, their regulatory requirements and progress to date.

Ms. Goeden presented the following: I have a briefing for you today on sand mining. Last year we spent several Commission meetings talking about sand mining and sand transport in the Bay. We thought it would be a good idea to come back and let you know what is happening regarding the permitted activities. In San Francisco Bay we have two areas where sand mining generally occurs. The first one is Central San Francisco Bay between the Golden Gate Bridge, Alcatraz and Angel Island. That is the deeper area of sand mining with the coarse sediment that is used primarily for concrete production. The other area is in Suisun Bay. Suisun Bay is the finer sand that is generally used as trenching and backfill for construction.

Last year the Commission authorized sand mining in these two areas for three companies, Hanson Marine Operations, Lind Marine and Suisun Associates for ten years. The total acreage of possible mining was 3,900 acres. The total authorized volume of mining for each year was 1.426 million cubic yards and that is the total for all three companies in the three different lease areas. We allowed them to increase mining in some years in times of high construction need and production in exchange for lower mining in other years. For peak mining overall, the Commission authorized 1.75 million cubic yards per year. The total possible mining that could take place, considering those peak mining events over the ten years is 14,260,000 cubic yards.

Hanson Marine Operations is the only company authorized to mine in Central Bay mining, and represents about 80 percent of the overall mining activity. Lind Marine is the smaller company and mines primarily at Middle Ground Shoal and represents seven percent of the overall volume authorized. The third company, Suisun Associates is the combination of the two companies as a joint venture, and they operate in Suisun Channel, which is 13 percent of

the overall volume. I should also mention that of the three sites Middle Ground Shoal is a privately-owned site. The rest is owned by the State Lands Commission and they have leases in place and receive royalties for the state for the mining activity.

We had a number of permit conditions to modify the project from how it was originally proposed. The first conditions I will touch on concern the protection and the minimization measures for the environment. One of the protection measures was a limit on the volume of mining. The miners have been turning in their quarterly reports and they are staying within their authorized volume limits and are mining within their lease areas as we expected them to do. We implemented buffer zones, along with the resource agencies to protect sensitive and shallow water habitat, protections that also limit impacts to the listed species. Those buffer zones are still active and the miners are complying with them. In addition, the miners have installed fish screens on their equipment so it reduces entrainment of listed fish and to ensure that entrainment of native and listed species is reduced. They also have limits on their water intake and volume pumped through the system and they are following those guidelines as well.

Both companies have oil spill prevention plans in place. Should something go wrong they are ready and prepared to take care of those issues.

The commission also put in place a number of monitoring requirements. The first of these was the bathymetric change analysis. They did a bathymetric change analysis right before the permitting went forward so we had that data. The next bathymetric change analysis is not due until 2018 but they fully plan on doing that work. They have installed and are tracking their mining events. We can look online and they turn in compact discs creating a record of the mining activities. The tracking shows when they leave the sand yard, the transit route, when and where they are at the mining site, then when they are transporting the sand back to the yard.

Monitoring of biological impacts included having a designated biologist educating the workers and doing compliance monitoring. They have a designated biologist doing that work and we have seen an example of the reporting, this requirement was included in conjunction with the Department of Fish and Wildlife. There is also a requirement that they notify us and the other resource agencies if they identify take of a listed species. They have not notified us of this.

They have water quality monitoring requirements as well, including a self-monitoring program and we are in receipt of those reports. We had asked them along with the Water Board to take a look at the effluent as the water comes off of the mining equipment. That lets us consider and evaluate effect of turbidity and potential contaminants. They have done part of that study and they are expecting to complete it this summer. We can report back to you after that takes place. Regarding reports, we have annual reports due from them in May and are in receipt of the quarterly reports.

We did require mitigation for take of salmonids. The miners did purchase mitigation credit and we are in receipt of documentation of the purchase at Liberty Island up in the Delta. We also required that they contribute \$100,000 dollars collectively to CalRecycle to remove marine debris or abandoned vessels as mitigation for impacts to fish habitat. We did this in

conjunction with NOAA Fisheries. The interesting thing here is that CalRecycle, the receiver of the funds, seems to be a little bit too busy to do the work. We are currently working with NOAA and the sand miners to look at the concept of removing old abandoned piles that are leaching creosote as an alternative to abandoned vessels and marine debris.

Regarding the studies to help us better understand sand mining in the future; we have required the benthic ecology study and function study. This examines the impacts to the bottom and what is happening to the critters that live there and the fish that depend on those critters as a result of mining activity. The technical advisory committee has been formed and a work plan was developed. Last Monday or Tuesday they issued the request for proposals and we are having a pre-bid conference next Monday.

We had set up a funding to do the sand transport and dynamics studies. We are in the planning phase for that. The miners have contributed the first of four required payments, a total of \$299,958 and that money was given to the Coastal Conservancy who is holding the money and managing the contracts on BCDC's behalf. We are working with State Coastal Conservancy so that we can minimize the contracting work of our limited staff. We are in the process of developing the Sand Transport Dynamics Study. We will have to put together a Technical Advisory Committee, identify appropriate management questions and engage independent scientists to help us understand the potential studies and develop a study program.

We will continue to update the Commission.

Chair Wasserman continued: No action is required on the item and there are no speakers. This brings us back to Item 10, which is the final item this afternoon.

**10. Briefing on the US Environmental Protection Agency San Francisco Bay Water Quality Improvement Fund** Chair Wasserman announced: Item 10 is a briefing by Commissioner Ziegler on the U.S. Environmental Protection Agency's San Francisco Bay Water Quality Improvement Fund.

Commissioner Ziegler presented the following: I am with U.S. EPA, Region 9. Region 9 includes California, Arizona, Nevada, Hawaii and the Pacific Islands. I manage our Watersheds Office which is within the Water Division. I do a lot of our grant programs and provide funding.

We have funding here to do a lot of the wetlands restoration and we are doing that. This is to share with you some of the work the Commissioners are doing that fits in with BCDC and other agencies.

We have funding to do really good water quality work and wetlands enhancement. Since 2008, thanks largely to Senator Feinstein, five million dollars per year has appeared in our budgets specifically for competitive grant programs for San Francisco Bay to do this work.

We have received over time about 40 million dollars. This is for the nine Bay Area counties that drain to San Francisco Bay.

Every county gets some of this money. We have had agencies and local governments who have done tremendous projects with these funds. It is a competitive grant program. The amount of proposals coming in asking for funding far exceeds what we have been able to provide.

Part of my reason to be here is to still try to get the word out to get more proposals in. We do want to see these numbers get to areas where there is a better distribution.

We have three basic types of projects that we are funding. Most of the money has gone to what we call water quality work and also wetlands restoration and a smaller part has gone to greening development and green infrastructure.

What is really involved in this is the connection of the land to the Bay. It is the whole balance of all that I have mentioned. This balance has to be worked on by everyone involved.

We can account that we have leveraged 145 million dollars and it is probably a lot more than this. We are all putting together money to make this work. We have 75 different partners.

There is new money coming out in 2016 and it will be another 4.5 million. Thanks a lot for your good work. These funds are primarily for implementation; getting projects done. Planning and assessment is needed and we are helping with this as well.

We need to have investment plans in place so that we can get the highest return in terms of environment and other values. It is a work in progress. Thanks.

**11. Briefing on Highway 37 (POSTPONED).** This item was postponed.

**13. Adjournment.** Commissioner McGrath commented: I wanted to remind those of you who want to go out and take a look at some of the things that we have done, I bicycled yesterday along the Bay Trail and I went up to Marina Bay, and the development part of this Commission in the public access is something that needs care and attention. Marina Bay was an old Kaiser shipyard that is now three parks, a marina entrance channel and a number of residential developments. The interesting thing is the developer did not put in the public access at first. Roy Gorman litigated that. What I saw yesterday was not only an upgraded trail, but signs that the Marina Bay Homeowner's Association is now maintaining it. This is something that is seen as a regional and a local benefit. We do good things. Since Roy has passed I would like to move that we adjourn in his memory and with appreciation to his efforts.

Upon motion by Commissioner McGrath, seconded by Commissioner Scharff, the Commission meeting was adjourned in memory of Mr. Roy Gorman at 3:34 p.m.